**Sampling**

In the social survey the best kind of sample is a census – at least in theory. In a census study data are gathered from every member of a given population, as in national censuses (see Dale and Marsh, 1993). It is usually impractical on resource grounds.

A census of all students in a university or all of the adults in a given town would be costly
in terms of time, labor and materials. There are several ways representativeness can be achieved, though there are two broad types: probability and a non-probability sampling. Generally speaking, when one wishes to obtain the most representative sample the aim should be to construct a probability sampling.

 **Probability Samples:** In a probability sample (often called a random sample) each member of the population has an equal chance of being selected. Therefore, providing data can be collected from every member that is sampled.

**Sampling Frame**

In order to select the sample we need certain information. We need a list of all of the members of the population, or at least the best possible Selecting and Sampling list of those members. This is called a sampling frame (Millams, 2002).

There are a number of lists one might use, for instance; the electoral lists of registered voters in the town, or households in a city blocks, or all the registered (enrolled) students of a university.

A sampling frame can be any comprehensive list of the population of interest and many samples are of smaller populations with particular characteristics (ibid)..

**Simple Random Sample**

Having chosen the best possible sampling frame the next step is to allocate a consecutive number to each member of the population. The sampling units (those selected from the population) can be chosen by selecting numbers from a random number table, or (more usually now) getting the
computer to generate a series of random numbers (Wimmer and Dominic 2015). Suppose, then, numbers started at 01 and ended at 744, the computer would tell us to pick (for example) 04, 07, 22, 39, 41 & so on.

 Now in relatively small populations this simple probability sampling works well, but such a sample may not be sensitive to all of the characteristics that are of interest, or would be too costly and time-consuming in a large population. Imagine if you want to conduct a survey on the views of Pakistani voters towards constitutional change, or voters views towards NAB performance. A simple probability sample would require you to have a list of all of the voters in the country and then to make a selection from the list. But
the task of selection, yet alone the survey that followed, would be formidable.

**For example**, carry out a survey of the University students’ attitudes towards the use of internet for academic purposes for at least to address three major questions: (1) Whether the difference is differentiated on the basis of gender of a person? (1) Whether the difference is differentiated on the basis of academic programs? (1) Whether the difference is differentiated on the basis of a person educational level (BS 1st semester vs BS 8th semester? (1) Whether the difference is differentiated on the basis of a person’s previous academic achievements? (1) Whether the difference is differentiated on the basis of a person’s income level?

**Sample size**: If someone intents to draw a sample size of two and forty students from the entire University students then he/she needs to select few faculties, some departments and some of the classes in the following manner:.

Two faculties: science and art & humanities. Faculty of science: departments of CSIT, chemistry and zoology. Faculty of arts and humanities: departments of media and communication studies, English and fine arts. If we assume 50 students per semester (BS 1stsemester 50 + 8th semester 50) then 100 students from each department (six elected departments total students 6×100=600) total will be the sampling frame also called consolidated or comprehensive list.

To meet the required target of sample size (240) we need to select randomly 40 students (20 from semester 1st – 10 girls vs 10 boys-- and 20 from semester 8th– 10 girls vs 10 boys.

**Systematic Sample**

Systematic samples are, strictly speaking, still a simple random sample, but this method uses a different approach to selection. First, the size of the sample is determined and turned into a sampling fraction (interval). If in a population of one thousand, our sample is one hundred, then the sampling fraction is 1/10.

The sample is selected by then choosing every tenth person from the sampling frame (comprehensive list of the units of analysis, see the following example). This is usually begun with a ‘random start’, that is a number randomly selected as a starting point.

**For example**, in systematic sampling all the same procedure is being used as mentioned above in simple random sampling, but here the only difference is that the sample frame or comprehensive list of 600 then our fraction or interval would be: 1, 4, 7, 10, 13, 16, 19 and son.

**Stratified Sample**

Stratified samples divide a population into strata (or sub-groups). These are categories that the researcher knows something about beforehand. For example, suppose that we wish to conduct research on the opinions of university students on welfare issues. It is assumed that welfare provisions are different in its faculties, women, men and mature students have different welfare experiences.

‘Strata’ chosen will then be the faculties, men, women and mature students, with the appropriate proportion relative to the size of the strata. If we had used a simple random sample, chance may well have produced under-representation of some of these groups and an over-representation of others. Once strata have been identified, simple random or systematic sampling can be used.

**Cluster Sample**

Cluster sampling uses naturally occurring ‘clusters’. Often these are geographical and resolve the problem of representativeness across countries or large regions (Williams, 2002). For example, a polling organization that wishes to research satisfaction with the Sargodha city assembly might first select a probability sampling of voting constituencies across Sargodha city and then select a sample of voters from within those constituencies.

 In the example given it is possible that the constituencies chosen might be mostly urban, or mostly rural. The more sampling units you have, the more likely the variation in population
characteristics will be represented.

How to draw a sample that can ensure equal representation of all possible strata of both urban and rural localities? We need to look for maximum variation among individuals of the study‘s population (see the following). **Example**

 **Two main strata**

 **Urban** **Rural**

 Gender: Men/Women men/women

 Age:18 to 30 30 to 50

 Income :up to 30000 more then 30000

 Education: upto inter more than inter

 Religious and ethnic groups can may also be considered.

**Non-probability Sampling:** Sometimes probability sampling is not possible, or cost-effective. The most important non-probability sampling method used is that of quota sampling.

**Quota Sample**

Quota sampling is popular with market research companies in surveys of known populations. A quota sample requires the researcher to know how many people (or groups, etc.) there are in a given population with the characteristics of interest (Wimmer and Dominic, 2015).

Often the basis for this prior knowledge comes from national censuses, or other population measures. In any given town or city we can know how many men and women there are, how many fall into each age group, how many live in public housing, have access to cars, etc.

Consequently we can design a sample with a quota proportionate to the number of people with
that characteristic in the population. Many believe this approach to be statistically as good as probability sampling, though it does have some drawbacks.

 For example, while an interviewer can quickly fulfill a quota in a busy shopping centre (on the basis equal of equal representation of age, gender, and social class, etc.), then there may be peculiarities (the quality of being strange) about such people not specified in the quota characteristics. Shopping centre chosen is too expensive to attract many people, which means those you eventually sampled may be a typical.

**Simple example** can be that if someone wants to conduct a survey exploring the using habits of the university students smart phone for varieties of purposes with a sample size of three hundred, and wants to use quota sampling. Then he/she requires to select six departments—three from faculty of sciences and three from faculty of Arts and humanities—and 50 students from each department consists of 25 boys and 25 girls.

**Convenient Sample**

Some populations are rare or elusive (indefinable). For example, probability or quota sampling would take far too long to locate members of small religious or ethnic groups in a population. Sometimes members of such populations, for example, those defined by illegal or deviant activity, are hidden. Obviously where a sampling frame does exist you can select simply from
available lists and use a probability sample, but often no such lists exist and it is necessary to use convenience or snowball sampling. The former simply recruits respondents where it is possible (ibid).

**Snowball Sample**

It is basically a referral process. Using this sample, a researcher uses contacts to lead to other contacts. Neither produce statistically generalizable results in the strict sense, but might be said to at least produce some results that can give insights into a population.

Selecting and sampling in interpretive research, sampling and generalization are inextricably linked. In order to make generalizations we need to sample ‘miniature’ (small) versions of the population.

In interpretive research issues of selection are often prioritized over statistical representativeness. Therefore, individuals are selected, who have characteristics which are of interest to the researcher in specific ways.

**Purposive Sampling**

The organizing principle for sampling in interpretive research is often theoretical sampling where the researcher is testing his/her theory through selecting cases that can confirm or falsify it. Mason (1996) noted, you may have sampled particular people, it may be their experiences or the interactions between them that are interesting. To get at those experiences or interactions you needed to sample those particular people.

The researcher is, then, theorizing about how particular kinds of people might think or behave. What each has in common is that they are chosen on the basis that the researcher theorizes that they will yield the best information. The more exploratory the research and the less propositional the theorizing, the more flexible subsequent sampling will be.

**Summary**
The aim of sampling is to produce a miniature (small) version of the population that accurately replicates the key attributes in which we are interested. The best way of doing this is through the probability sample, in which every member of the population has an equal chance of being selected. This way of sampling permits us to measure statistically the differences that might exist between sample and population – to be able to express our statistical ‘confidence’ in the sample.

Accurate sampling of a large population is often achieved by stratifying, or identifying naturally occurring and representative clusters. Survey research (especially market research) often uses quota sampling as a substitute for probability sampling, but the accuracy of a quota sample is dependent upon both the accuracy of the data quotas are based and in interviewing, how accurate the selection of respondents is.

Sampling in surveys is closed to the common-sense intuition about choosing people, or things at random and although can be statistically quite complex, the fundamental idea is easier to grasp. In interpretive research although one is selecting and arguably ‘sampling’, the reasoning is wholly different and possibly even contradictory.

Whoever or whatever has been selected must be seen, at least in the weak sense, of being representative of a wider population or ‘universe’, yet most interpretivists would deny (for good reason) that generalization from sample to population is a goal at all.